

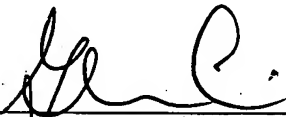
The LanguageWorks, Inc.
1123 Broadway
New York, NY 10010
Tel. 212 447 6060
Fax 212 447 6257

LanguageWorks

STATE OF NEW YORK)
)
COUNTY OF NEW YORK) ss

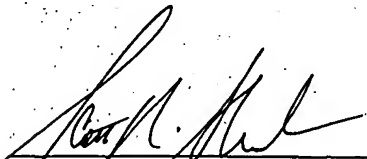
CERTIFICATION

This is to certify that the attached, to the best of my knowledge and belief, is a true and accurate translation into English of the *German Patent with International Publication Number WO 2004/023856 A1*, filed on 09/02/2003, originally written in German.



Glenn Cain
Manager of Legal Translation Services
The LanguageWorks, Inc.

Sworn to and subscribed before me
This Ninth day of May, 2005



Notary Public

SCOTT R. SHENKMAN
Notary Public, State of New York
No. 015H6049060
Qualified in Westchester County
Commission Expires Oct. 2, 2006

(12) INTERNATIONAL PATENT APPLICATION PUBLISHED IN ACCORDANCE WITH THE TREATY ON
INTERNATIONAL COOPERATION IN THE FIELD OF PATENTS (PCT)

(19) World Organization for Intellectual Property
International Office

(43) International Publication Date
March 18, 2004 (3/18/2004)

PCT (10)

International Publication Number
WO 2004/023856 A1

(51) International patent classification⁷:

H05K 7/20

(71) Applicant: (for all designated states, with the
exception of US): FRAUNHOFER-

(21) International file number:

PCT/DE2003/002904

GESELLSCHAFT ZUR FORDERUNG DER
ANGEWANDTEN FORSCHUNG E.V. [DE/DE];
Hansastraße 27c, 80686 Munich (DE).

(22) International filing date:

September 2, 2003 (9/2/2003)

(25) Filing language:

German

(26) Publication language:

German

(30) Priority information:

102 40 419.4 September 2, 2002 (9/2/2002)

(72) Inventor(s); and

(75) Inventor(s)/applicant(s) (for US only):

PERTHOLD, Rainer [DE/DE]; Schleifweg 35,
91085 Weisendorf (DE). ARNETH, Stefan [DE/DE];
Fränk. Schweiz Strasse 10A, 91094 Langensendelbach
(DE). WILD, Manfred [DE/DE]; Im See 18, 92348
Berg (DE). DUERST, Jochen [DE/DE]; Kellerstrasse
4, 96178 Steppach (DE). GERHAEUSER, Heinz
[DE/DE]; Saugendorf 17, 91344 Waischenfeld (DE).

(61) Supplementary filing to previous filing or previous patent
DE 102 40 419.4 (POA)

Filed on

September 2, 2002 (9/2/2002)

(Continued on the next page)

(54) Title: FLAT REFRIGERATING UNIT WITH COUNTERCURRENT COOLING

(57) Abstract: The aim of the invention is to improve the performance of heat exchangers such that lost heat is discharged from a cabinet or device whereby the rise of the inner temperature for each discharged watt of power loss is only slight. The invention also relates to a flat refrigerating set. The temperature of the heated air (SL) can be reduced in a the counterflow (L4; L3; k1; k2, etc.) by means of counterflowing cooling air (KL) without the cooling air physically entering into contact with the heated air flow (L1; L3; L5) that is to be cooled. The airflow to be cooled (SL) can be supplied to several parallel first chambers (k1, k3, k7) via an inlet area (13). The parallel first and parallel second chambers alternate in the direction of the height or density (h) of the refrigerating unit. The alternating chambers (k1, k2, k3, k4, etc.) also extend into a section of the flat cooling unit (113), which is located between the inlet area (13) and a closer end (40, 41) of the refrigerating unit.

- (74) **Attorneys:** LEONHARD, Reimund and Associates;
Leonhard Olgemoeller Fricke, Postfach 10 09 62, Tal 30,
80083 Munich (DE).
- (81) **Designated states (national):** CA, DE, US.
- (84) **Designated states (regional):** European patent (AT, BE, BG,
CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT,
LU, MC, NL, PT, RO, SE, SI, SK, TR).

Declaration pursuant to Rule 4.17:

– *Inventor declaration (Rule 4.17 Section iv) for US only*

Published:

- With International Search Report
- Prior to expiration of the deadline for amendment of the claims; publication is repeated if amendments are received

For an explanation of the two-letter codes and other abbreviations, please see the Guidance Notes on Codes and Abbreviations at the beginning of each regular issue of the PCT Gazette.